New York, January 24, 1917. No. 39

Published to advance the Science of cold-blooded vertebrates

A BALISTES VETULA TOPOTYPE FROM ASCENSION.

Through the kindness of Major H. N. Benett, R. M. I., Commandant of H. M. Island Ascension in the tropical Atlantic, we have had the pleasure of examining a topotypical example of the trigger fish, *Balistes vetula* Linnaeus. Reference to this fish was made by the writers in 1914, in connection with the description of a new race of the species from Trinidad Islet in latitude 20 south (Bull. Amer. Mus. Nat. Hist., Vol. XXXIII, pp. 265-266). At that time we knew of no specimen in America of *Balistes vetula* from the type locality, and in describing the subspecies *trinitatis*, which obviously differed from the West Indian form, we stated that the former might possibly prove to be identical with Linnaeus's *B. vetula* of Ascension, in which case a new name should be sought for the well-known representative of West Indian waters. Major Benett generously agreed to assist in settling the problem, and in due course an adult specimen preserved in formalin has reached us, and has been catalogued as number 553 in the collection of the Brooklyn Museum.

We have compared the Ascension Island fish with the type of *trinitatis* which it almost exactly equals in size (being 380 mm. long to base of caudal) as follows: Head, 3.0 in length to base of caudal; depth, 2.0; thickness of body, 2.0 in head. Head bluntly pointed, dorsal and ventral outlines similarly

oblique, both gently arched. Dorsal soft rays 31, anal 29. A line drawn from the origin of the soft dorsal to the origin of the anal would cut the lengthwise axis of the body a distance before the base of the caudal contained 2.4 times in the length to base of caudal. The stripes on the head are like those of the West Indian fish.

Although somewhat intermediate, the Ascension specimen is closer to West Indian examples than to the one from Trinidad. From the former it is very probably not taxonomically separable. This is in line with our idea of the probabilities in spite of the greater distance of Ascension from the West Indies than from Trinidad, based on the probable distribution of a sluggish swimming fish of this nature. The Northwesterly trade wind currents would make it difficult for a *B. vetula* to reach Trinidad from the West Indies, and as, on the other hand, Trinidad fish would not drift north of Cape San Roque, *B. vetula* from that island would be pretty effectually isolated from the North Atlantic current circuit, whereas those from Ascension would be on the outskirts of the same.

The high fin-count of the Ascension fish places it with descriptions of those from the Indian Ocean, which may leave the West Indian form as *Balistes vetula bellus* (Walbaum). We suspect that if the West Indian fish is separable from the Ascension, the Indian Ocean one will be found to be so also. As far as is determinable from a single specimen, *trinitatis* is a valid race.

J. T. Nichols,
R. C. Murphy,
New York, N. Y.

FISHES FROM PUNTARENAS, COSTA RICA.

A collection of fishes was obtained from the Costa Rica government many years ago by the Commercial Museums of Philadelphia. Recently, having

had the opportunity to study it through the kindness of Dr. W. P. Wilson, Director of the Museums, the list of species given below was ascertained:

Urotrygon mundus Gill, *Sciaedichthys troscheli* (Gill),

Gymnothorax punctarenae, sp. nov.: Head, 6½; depth, 11; snout, 5¼ in head; eye, 7; mouth cleft, 2⅓; interorbital, 4-4/5. Eyelids joined to skin of head. Teeth all uniserial, large compressed, lower front five enlarged and firm, and six large front upper ones with three depressible inwards. Hind edge of each tooth on its basal half, finely serrated. Lips fleshy. Front nostrils in short tubes, hind ones each as simple pore close over edge of each eye above. Body reticulated with brownish, leaving pale irregular blotches which become much larger and less defined on tail, until at tail end they form several large irregular vermiculations of brownish. Dorsal fin with basal half like color of back, border with dark brown broken marginal blotches. Anal largely dark brown, at least over greater marginal portion. Upper surface of head finely spotted or dotted with paler. Lower surface of head and belly pale, with faint and darker reticulations. Iris olive. Slight brownish blotch above gill-opening, though latter not surrounded by brown. Length 20-5/8 inches, from snout tip to vent 10¼ inches. Only one example. This species falls within the subgenus *Priodonophis* Kaup, on account of its serrate teeth. It differs, however, from the common Atlantic *G. ocellatus* in coloration.

Echidna nocturna (Cope), *Fundulus dovii* (Günther), *Mugil hospes* Jordan and Culver, *Holocentrus suborbitalis* Gill, *Caranx hippos* (L.) *Apogon dovii* Günther, *Centropomus nigrescens* Günther, *C. robalito* Jordan and Gilbert, *Dermatolepsis punctatus* Gill, *Lutjanus jordani* (Gill), *L. argentiventris* (Peters), *Haemulon scæfasciatum* Gill, *Anisotremus pacifici* (Günther), *A. dovii* (Günther), *A. interruptus* (Gill), *Brachydeuterus leuciscus* (Gün-

ther), *Pomadasis branicki* (Steindachner), *Buccone praedatoria* (Jordan and Gilbert), *Bairdiella ensifera* (Jordan and Gilbert), *Xystaema cinereum* (Walbaum), *Gerres brevimanus* Günther, *Kyphosus analogus* (Gill), *Pomacentrus rectifraenum* Gill, *Nexilarius concolor* (Gill), *Abudefduf mauritii* (L.), *Chaetodipterus zonatus* (Girard), *Pomacanthus zonipectus* (Gill), *Holacanthus passer* Valenciennes, *Balistes naufragium* Jordan and Starks, *Spheroides annulatus* (Jenyns), *Tetrodon hispidus L. Eumycterias punctatissimus* (Günther), *Scorpaena histrio* Jenyns, *S. mystes* Jordan and Starks, *Philypnus lateralis* Gill, *Dormitor maculatus* (Bloch), *Mapo soporator* (Valenciennes), *Paralichthys woolmani* Jordan and Williams.

HENRY W. FOWLER,
Philadelphia, Pa.

A COLLECTION OF FOOD-FISHES FROM ARGENTINA.

The Academy of Natural Sciences of Philadelphia received during the past summer a collection of the larger and more important food-fishes from the Argentina government. Though no definite locality is assigned, the specimens were doubtless obtained at Buenos Aires:

Mustelus mustelus (L.), *Luciopimelodus pati* (Valenciennes), *Pimelodus albicans* (Valenciennes), *Pseudoplaytystoma coruscans* Agassiz, *Doras granulosis* Valenciennes, *Loricaria anus* Valenciennes, *Prochilodus platensis* Holmberg, *Salminus brevidens* (Cuvier), *Menidia bonariensis* Valenciennes, *Mugil brasiliensis* Agassiz, *Sarda sarda* (Bloch), *Seriola rivoliana* Valenciennes, *Trachinotus glaucus* (Bloch), *Pomatomus saltatrix* (L.), *Perona signata* (Jenyns), *Polyprion oxygenius* (Schneider), *Acanthistius patagonicus* (Jenyns), *Sparus pagrus* L. *Cynoscion striatus* (Cuvier), *Sagenichthys ancylodon* (Schneider), *Micropogon opercularis* (Quoy and Gaimard),

Pogonias cromis (L.), *Pinguipes fasciatus* Jenyns, *Chilodactylus macropterus* (Schneider), *Helicolenus dactylopterus* (De Lar), *Prionotus punctatus* (Bloch), *Paralichthys brasiliensis* (Ranzani), *Percophis brasiliensis* Quoy and Gaimard, *Genypterus blacodes* (Schneider), *Phycis brasiliensis* Kaup, *Merluccius gayi* Guichenot.

HENRY W. FOWLER,
Philadelphia, Pa.

GRAND CANYON NOTES.

On a first and brief visit to the Grand Canyon of Arizona, June 6-10, 1916, en route to California, as might be expected, little time was available for herpetological observations. The few notes that were taken seem worth recording, chiefly because they come from a region of such extraordinary interest.

Two days were spent in conventional trips along the rim of the Canyon, the third day on a walk down the Bright Angel Trail to the Colorado River, and the fourth and last day in Camp near the Indian Garden on the inner plateau of the Canyon.

The dry season being well advanced, no batrachians, but many lizards of the genera Sceloporus and Holbrookia, were seen on top of the Canyon. Lizards in the Canyon averaged larger in size, and in addition to the genera mentioned included Crotaphytus, Gerrhonotus and Cnemidophorus. A specimen of *Sceloporus clarkii* captured in the Indian Garden is still living in the New York Zoological Park.

Two Batrachians—*Hyla arenicolor* and *Bufo punctatus*—were common in the Canyon.

Hyla arenicolor was observed along the small stream which runs through the Indian Garden, enters a narrow inaccessible gorge and reappears at the foot of the Bright Angel trail near the Colorado River. Dense thickets of willow, sedges, etc., border the stream, except at trail crossings, where clear, shallow pools have formed. In and about these pools the

frogs were most numerous, some still mating. No ova, but plenty of tadpoles were found in the water.

The tadpoles were about one inch long; uniformly dark gray above and iredescent light gray below; tail broad, heavily marbled, dark gray; eyes golden. The adult frogs averaged about two inches in body length, and were uniformly light gray above, with numerous minute spots and granulations, giving the skin the appearance of roughness.

The call of this frog is lower in pitch, but is otherwise very much like the bleating notes of *Hyla versicolor.* It was heard, occasionally, during the day, increased in volume towards dusk, and continued through the night. Only two of eight specimens, captured and sent to the New York Zoological Park, arrived alive.

Bufo punctatus, without doubt, is the most abundant of Batrachians in the Canyon, yet so secretive and strictly nocturnal is this toad that none are likely to be encountered, except after dark. During the one night spent in the Canyon its call, mingling with that of *Hyla arenicolor,* was the dominant sound of animal life. Search for the toads with an acetylene lamp revealed such numbers that no attempt was made to count them. There were hundreds—many on the trail and many more in the shallow pools in the Indian Garden. None were seen mating, but their small, black tadpoles, not exceeding half an inch in length, were swarming along the margin of the stream. Breeding evidently had taken place during May.

In size as well as in general appearance there is so little difference between this toad and *Hyla arenicolor* that one might easily be mistaken for the other. The call, though loud, is not harsh and consists of a series of deep, whistling notes, repeated at short intervals.

At least two more species of frogs are to be found along the stream in the Indian Garden. Of one, a

species of Rana, the tadpoles, fully two inches in length, were seen in the pools. Several times during perhaps an hour, a short, deep croak was heard coming from the willow thickets. It reminded the writer of *Rana palustris*.

Of another frog only the call, a soft click-click-click, was heard. It came from a cluster of aquatic plants in the middle of a pool, but the songster, undoubtedly a very diminutive creature, could not be found.

GEORGE P. ENGELHARDT,
Brooklyn, N. Y.

A NEW RECORD FOR THE RING-NECKED SNAKE IN MICHIGAN.

A specimen of *Diadophis punctata* (L.), captured near Marquette, has been presented to the Museum of Zoology, University of Michigan, by the Northern State Normal School. This is of interest not only as a new locality for the snake but also because it extends the known range of the species considerably, since it is the first authentic record of its occurrence in the Northern Peninsula. The species had been reported from Marquette, but, in view of the fact that young Storerias may be easily mistaken for ring-necked snakes, this record has been "open to question," as stated by Ruthven in the "Herpetology of Michigan."

HELEN THOMPSON GAIGE,
Ann Arbor, Michigan.

HABITS AND BEHAVIOR OF THE TEXAS HORNED LIZARD, *Phrynosoma cornutum*, Harlan, II.

An interesting fact mentioned by many writers, and easily confirmed, is that the horned lizard is very sensitive to the stings of the large agricultural ants which form its principal food. The lizard will fidget

nervously when stung by an ant on the back or on the leg, yet can swallow the insect alive and entire. The lining of the esophagus and the stomach seems to be peculiarly resistant.

A common habit, seen in about twenty-five per cent. of specimens, is that of wagging the tail when irritated. Incidentally, this habit is quite general among reptiles. Many non-venomous snakes vibrate the tail when surprised. Often they are mistaken for rattlesnakes, as the sound of a rapidly vibrating tail in leaves or dead grass is not unlike the warning of *Crotalus*.

The male horned lizards sometimes fight each other in hot weather,—if confined closely. This fighting seems to be rather harmless, consisting mainly of vigorous puffing and blowing. The writer once observed a large male dragging around a smaller one holding its tail in his mouth.

Horned lizards, unlike other lizards, do not have the power to break off the tail, when that member is grasped. In fact, a convenient method of capture is to seize the animal by its tail.

The Texas form may at times greedily lap up water, but seems to depend mainly on drops of dew on the vegetation. This habit is shared by the other members of the genus.

In North-central Texas, the horned lizards disappear with the first cold burst, which comes on usually between the middle of September and the first of October. Occasional specimens, especially very young forms, may be found as late as the first of December; but the majority are gone for the winter, after the first "norther" despite the many warm days which may follow.

W. M. Winton,
Fort Worth, Texas.

Edited by J. T. Nichols, American Museum of Natural History

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